513.22	Crushed Stone Slope Protection	square meter [Square Yard]

SECTION 514 - CURING BOX FOR CONCRETE CYLINDERS

514.01 Description This item shall consist of furnishing, installing, operating, and maintaining an approved thermostatically controlled curing box for concrete test cylinders, with the equipment as herein specified.

514.02 General The curing box shall be for the sole use of the Resident for the duration of the contract. The Contractor shall relocate the curing box to a new location, as directed, whenever considered necessary during the progress of the work. The Contractor shall furnish and maintain the electrical power and all utility connections necessary for the operation of the curing box. The Contractor shall monitor and maintain the internal temperature and water level of the box. The Resident shall be provided 2 locks, each with 2 keys, to be used with the 2 securing latches. A lock for the switch box, with 2 keys shall be furnished.

514.03 Construction Details The curing box for 150 mm [6 in] diameter by 300 mm [12 in] long concrete cylinders shall have dimensions sufficient to allow storage of a minimum of 18 cylinders. The top of the curing box shall be a lid hinged at the back with at least 2 securing latches on the front suitable for sealing and locking the curing box. The free movement of the lid shall be restricted to an angle of approximately 100º from the closed position to an open position. For metal boxes subject to corrosion, all interior surfaces shall have rustproof protection and the exterior surfaces shall be substantially painted with an approved paint. A moisture-proof seal, constructed of an approved cellular strip of 2BE520F26 synthetic rubber complying with the requirements of ASTM D2000, shall be provided between the lid and body of the curing box.

The curing box shall be constructed so that the required temperature and humidity within the box can be maintained using an immersible 1000 watt (minimum) heating element, when the heating element is immersed in water, approximately 100 mm [4 in] in depth, at the bottom of the box. The heating element shall be located to provide free access for cleaning and for adequate circulation of the surrounding water. A drain shall be provided for the water, located at the lower front edge of the box. Access shall be provided to all parts of the box for cleaning. The electrical utility connection to the source of power shall be made in a lockable switch box that is securely attached to one end of the curing box.

All electrical connections from the curing box to the utility connection shall conform to the latest requirements of the NEC. The curing box shall be effectively grounded. Grounding shall be accomplished in one of the following ways:

a. By means of a grounding conductor run with the circuit conductors in cable assemblies or flexible cords, provided an approved plug is used, 1 fixed contacting member for the purpose of connecting such grounding conductor to the grounded metal raceway or to a grounding conductor installed only for equipment grounding purposes; the grounding conductor in a cable assembly may be uninsulated but, where an individual covering is provided for such conductors, it shall be finished to show a green color.

b. A direct connection from the grounding wire (green color) on the Curing Box wiring to a 2.4 m [8 ft] non-ferrous metal driven ground rod and ground rod clamp.

For installation, where the Curing Box is outside and exposed to the weather, all wiring and fittings shall be of the weatherproof type.

An approved bimetallic thermometer shall be installed that will measure the internal temperature of the curing box. The thermometer shall have minimum gradations of 1°C [2°F] and a minimum face diameter of 75 mm [3 in], open to the outside. The thermometer shall be easily read from a distance and shall be protected from physical damage by suitable shielding. Substantial folding handles shall be provided on the end of the box for use in moving.

The curing box shall be suitable for maintaining an internal temperature of 21°C [70°F] plus or minus 3°C [5°F] when the ambient temperature is as low as -23°C [-10°F].

514.04 Method of Measurement Curing box for concrete cylinders will be measured by each unit, furnished and satisfactorily maintained.

514.05 Basis of Payment The accepted quantity of curing box for concrete cylinders will be paid for at the contract unit price each, which payment shall be full compensation for furnishing and maintaining, for all materials, labor, tools, equipment, electrical power, temporary utility changes and adjustments, and all necessary incidentals. At the completion of the contract, the Curing Box shall remain the property of the Contractor and shall be removed from the site of the work.

Payment will be made under:

Pay Item		Pay Unit
514.06	Curing Box for Concrete Cylinders	Each

SECTION 515 - PROTECTIVE COATING FOR CONCRETE SURFACES

515.01 Description This work shall consist of furnishing and applying a protective coating on concrete surfaces as called for on the plans or as designated by the Resident in accordance with these specifications.

515.02 Materials Materials shall meet the requirements of Section 711.05, Protective Coating for Concrete Surfaces.

515.03 Surface Preparation On surfaces to be treated, all voids shall be filled with mortar and the entire surface shall be dressed by dry rubbing to remove form marks and blemishes to present a neat appearance. The concrete shall remain dry for at least 48 hours before treatment and shall be free of laitance, oil, grease, dirt and dust. All traces of dust shall be removed immediately before applying the linseed oil mixture.

The treatment shall not be done until at least 14 days after casting the concrete and completed at least 24 hours before the treated portion is opened to traffic.

515.04 Application Enough material shall be used to coat the surfaces thoroughly. Two coatings shall be applied 24 hours or more apart. The minimum rates of application shall be 0.10 L/m² [.025 gal/yd²] for the first coat and 0.07 L/m² [.015 gal/yd²] for the second coat.

The method of application may be dependent on available equipment and the area involved. Hand spray methods or pressure distributors may be used and application by rollers or brushes may be desirable under some conditions. Care shall be taken to prevent discoloration of areas and parts not requiring treatment.

Twenty-four hours after application, excess coating materials, if any, must be removed.

When practical, treatment of the concrete surfaces shall be completed before exposure to deicing salts. The